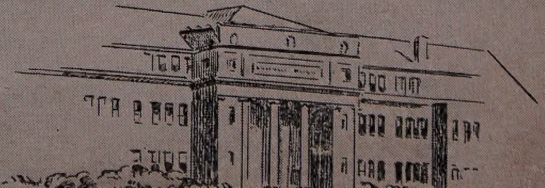
# ILLINOIS AGRICULTURIST

Fifty-Third Year DECEMBER, 1948 Member A.C.M.A.



# CAREERS AT GENERAL ELECTRIC

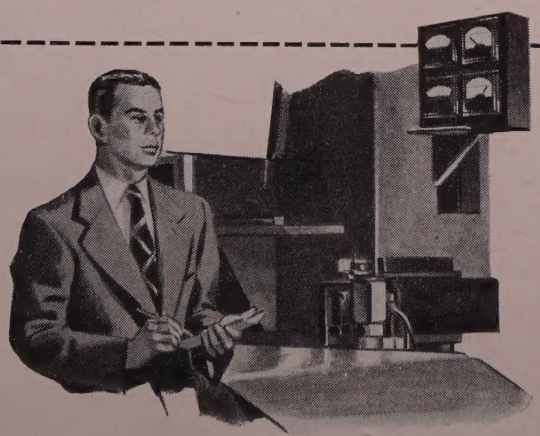
**General Electric is not one business, but an organization of many businesses, offering opportunities in virtually all the professions. Here three G-E men brief the career-possibilities which the company offers in business, in electrical engineering and in sales engineering.**

## HE WANTS TO START YOU IN BUSINESS

R. J. Canning (Michigan), Director of the G-E Business Training Course: Every year I visit colleges and universities to interview and select seniors interested in business careers with General Electric. Our training course, now in its 30th year, instructs business administration and liberal arts men in business procedures, offering practical experience as well as evening classes in company accounting and financial operations. Many of our present leaders got their start in this course.

## ELECTRICAL ENGINEER

A. H. Lauder (Wyoming), Assistant Manager of the G-E Large and Small Motors Division: I don't think opportunities were ever better for the engineer who takes his engineering seriously—who concentrates on it and avoids the temptation to swerve off into administrative work. In my 26 years in General Electric engineering, I think I've found as much variety and opportunity for creative thinking as a man could want.

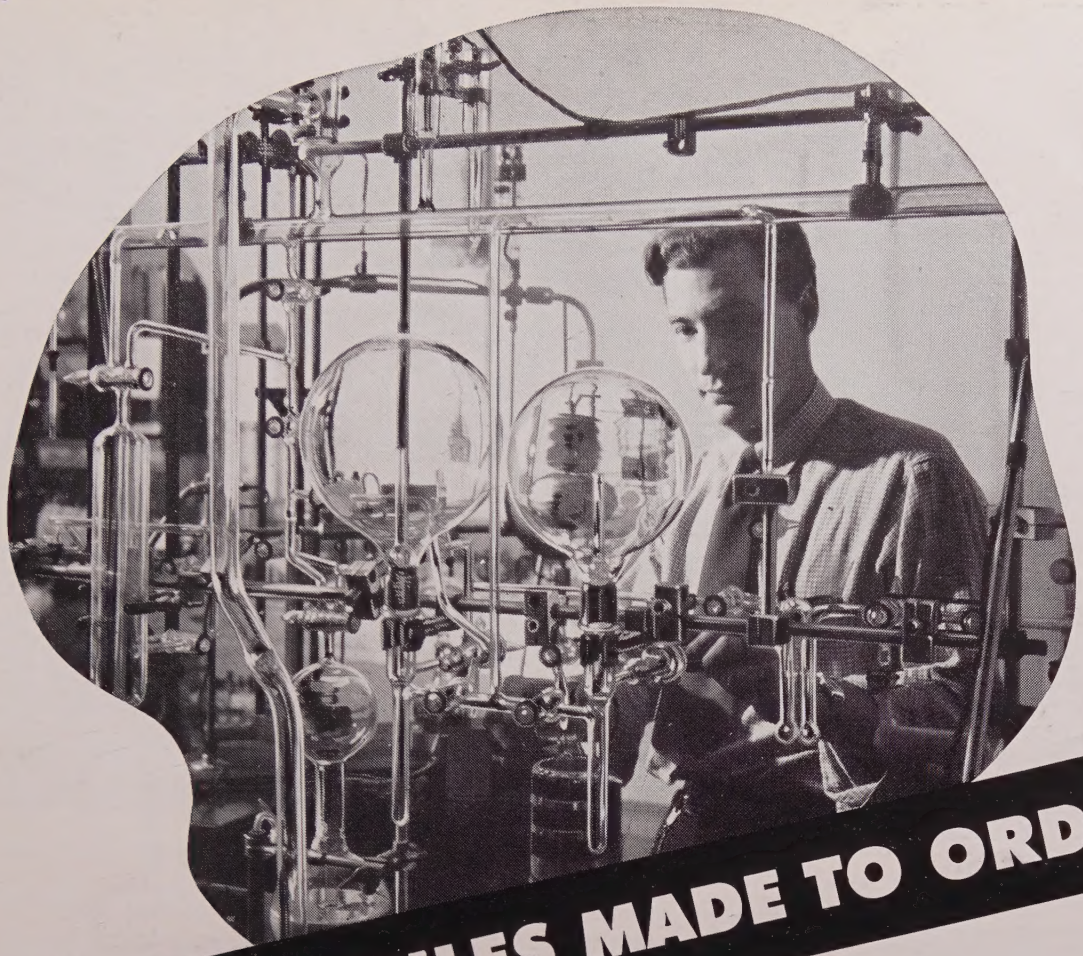


## SALES ENGINEER

P. C. Shirkey (Princeton), G-E sales representative with the Republic Steel Corporation: The company needs many men to do the kind of work I'm doing—that is, to keep up with new and increasingly complex apparatus and to find economical and practical applications for it among G-E customers. The company runs its own course for us, in which we study the background of engineering knowledge and experience as well as the theories of sales methods.

*For further information about a BUSINESS CAREER with General Electric, write Business Training Course, Schenectady — a career in TECHNICAL FIELDS, write Technical Personnel Division, Schenectady, N. Y.*

GENERAL ELECTRIC



# MOLECULES MADE TO ORDER

Year by year, month by month, oil industry chemists find new, fascinating possibilities in the hydrocarbon molecules that make up petroleum. They have learned many ways to convert them into new and more valuable molecules.

One result of this experimentation has been a flexibility that permits stepped-up output of whichever petroleum products are most urgently required. When the primary need was for vast quantities of aviation gasoline to help win the war, research showed how it could be produced. In a peace-time summer, the great demand is for an ocean of automobile gasoline; in winter, less gasoline and more fuel oil are needed. Research tells the industry how to make petroleum serve the public more efficiently.

Standard Oil is a leader in petroleum research. Many remarkable developments have come from our laboratories; many more are sure to come, in the future, if we continue to attract good men, furnish them with the most modern equipment, and provide an intellectual climate in which they can do their best work.

We *are* continuing.

## Standard Oil Company

(INDIANA)

910 S. MICHIGAN AVENUE, CHICAGO, ILLINOIS

STANDARD

STANDARD SERVICE

# Progress originates in the minds of Free Men!


**...TO KEEP OUR PLACE IN THE WORLD...**

● **UNITED STATES OF AMERICA . . .**

first among nations in national income . . . in production of wheat, corn, cotton, petroleum, coal and iron . . . in communications, in motor vehicles per capita . . . *in education!*

Yes, but for how long? Appalling conditions prevail in many of our schools. Classrooms are overcrowded; equipment is worn; textbooks are needed; teachers by the thousands are turning to other professions that offer greater financial security. It is high time that *all* citizens awaken to the crisis in our schools!

*Know* the conditions in your local schools. *Support* and work with organizations seeking to improve your childrens' education. *It is vital to back those who are teaching our youth the fundamentals of the American way of life!*

Equality, opportunity, aggressive ingenuity, freedom from oppressive restrictions—these things have helped to make America great. Here, man is guaranteed certain inalienable rights. He enjoys blessings that exist only where freedom reigns. The birthright of a free education . . . the right to worship as a man pleases . . . free choice in his life's work . . . these inheritances of freedom, and many, many more, have nurtured the social, agricultural, industrial, and economic progress that identifies mighty America!

In this land where every man is free to do *whatever* he chooses, *wherever* he chooses, *however* he chooses, this record of Minneapolis-Moline employees is truly significant: *Of the present employees, 17 have been with the company from 50 to 60 years; 158 from 35 to 49 years; and 548 from 20 to 34 years. Taking into consideration all 732 old-timers, they constituted 23% of all MM employees at the close of 1940, with an average employment record of over 40 years. Even with the expanded employment of well over 6,000 now necessary to meet the increased demands for MM products, the nucleus of old-timers still constitutes 11 per cent of the total now employed!*

Such faithful service Minneapolis-Moline is proud to acknowledge. It is a record of skilled craftsmen at work in a democracy where freedom from hampering restrictions is a cherished privilege . . . a record of men of industry building modern machines of proved quality to help farmers meet the world-wide demand for more food, fibre, and oil.

MINNEAPOLIS-MOLINE MM MODERN MACHINERY

***Minneapolis-Moline Produces a Complete Line of Farm and Industrial Tractors and Power Units, plus a Complete Line of Modern Machinery for the Farm***

**MINNEAPOLIS - MOLINE**

**POWER IMPLEMENT COMPANY • MINNEAPOLIS 1, MINNESOTA, U.S.A.**

# THE ILLINOIS AGRICULTURIST

ESTABLISHED 1896

*Member Agricultural College Magazines Associated*

**DECEMBER, 1948**

**Volume LIII** **Number 3**

Published six times yearly by students in Agriculture and Home Economics at the University of Illinois


## *In This Issue:*





**OUR COVER: Two ears per stalk, two loads to the acre, a moist, cloudy day—that's good corn picking with farming at its best! Profitable farming is essential for good farm living. See story on page five. (Photo courtesy of Funk Bros. Seed Company.)**

## OUR PLATFORM

**To acquaint students and faculty in the College of Agriculture, agricultural leaders, and the rural people of Illinois with the latest scientific developments in agriculture and home economics.**

**To report events of general interest on the College of Agriculture campus.**

**To serve as a means of training agricultural and home economics students in journalism and business administration.**

**To promote the best interests of agricultural and home economics students on the campus of the University of Illinois.**

## WE'D LIKE A FEW TIPS

One of our readers recently took a few minutes of his time to drop us a short letter expressing his opinion of our first issue. It was certainly a great satisfaction for your editor to know that after many hours of effort, some one had read our magazine to the extent that he could make favorable comments, criticize other features, and make suggestions about what he would like to see in future issues.

Unless we are putting into each issue of the Agriculturist some material of interest to every one of you, the value of our editorial efforts is lost. Unless we receive your comments and suggestions, we have no way of knowing what you would like your magazine to contain.

By setting up our platform at the beginning of this school year, we had hoped to establish a policy which would result in a bigger, better, and more worth while magazine for all agricultural students, faculty, and other people with agricultural interests.

Up to this time, the cooperation of our College of Agriculture faculty has been very encouraging. They have been willing to furnish information and pictures for many of our features. They have made suggestions for improvement of our magazine. On our circulation list are over 175 faculty members.

However, the majority of you are students either in the College of Agriculture or in one of the 453 high schools in the state which receive subscriptions to the Agriculturist. We want to hear from you. Are we carrying articles and features of interest to you? Are we omitting something that you would like to see included in our editorial content?

The only way that we can publish a magazine that will be of interest to you, that you will look forward to receiving each issue, is for us to know what you want to read. So tear yourself away from those books for a few minutes and jot down a few comments about what you think your ag magazine should be and with careful consideration for all concerned, we will try to give it to you.

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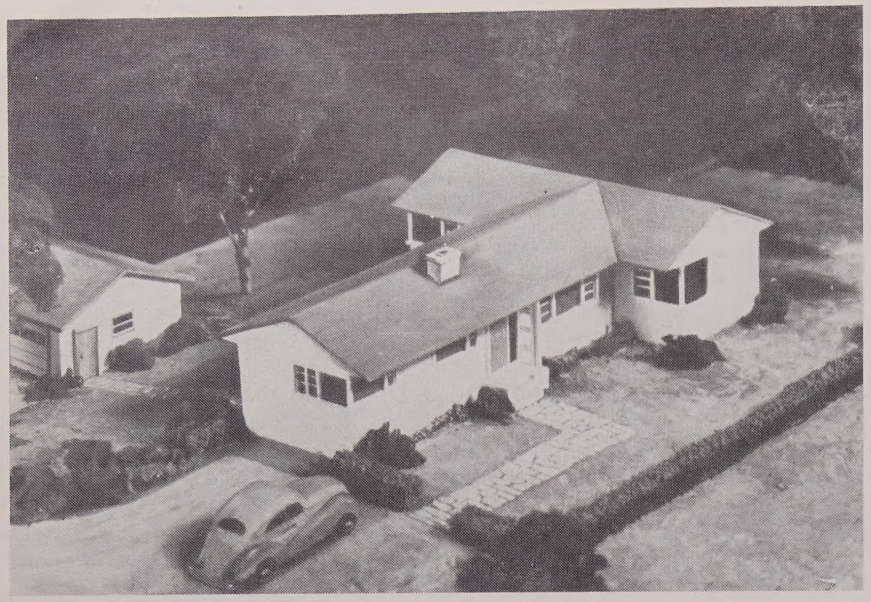


Lawn plan of the modern farm home.

# Arrange for Convenience in Your New Farm Home

By Russell Lewey

To make that little vine-covered cottage the best little farm house for you and your loved ones, careful planning must be done. The whole idea of this careful planning is to change the inanimate structure of stone or wood into a lovable home—something that will provide you and your family with the most satisfaction, convenience, and personal appeal.

In planning your home, five essential points that are distinguishing of a farmhouse must be considered. A solution must first be found that will relate the farmhouse to the other buildings, to the highway, and to the points of the compass. The arrangement of the rooms is also influenced by the direction of sunlight and the prevailing winds.

Natural beauty should not be neglected. The plan should take advantage of the farm's generous home site, distant views, and spacious outloor living areas. Locate the house to make the most of any trees, valleys, woods, or hills on or near the site.

**Special Requirements for Farmers**

A well-lighted workroom in addition to the kitchen is needed. Laundering and preparing produce are too often pushed to the woodshed or basement in older houses through lack of adequate facilities.

The farmer handles a sizable business. Accounting books, income tax reports, receipts, notices and letters need to be well cared for. In this respect, the farmer merits a desk and file space for records; not an old shoe-box stacked away in a corner.

**This feature is based on the University of Illinois Small Homes council circular, "A Basic Farmhouse Plan," and is printed by permission. Information regarding other circulars in this series on home building may be obtained from the Small Homes council, Mumford House, University of Illinois.**

To avoid transporting some of the "east forty" soil into the living room, the farmhouse should be provided at the rear entrance with clean-up facilities for workers.

A few ideas such as these in the initial planning will mean much through the years to come.

**Arrange for Family Needs**

Having become aware now of the points that cause the farm home to differ from a city home, let us investigate the room arrangement as it meets the family needs.

How shall the entrances be located? The housewife's common complaint is that visitors come to the back door. They must be directed or guided. To do this, the entrance to the living area should be placed convenient to the driveway.

The homemaking area can be termed the nucleus or control center of the farm. Therefore it is desirable to have this area placed so as to give a view of the highway, the approach, and the farmyard itself.

Now we come to the dining room and living room arrangement. Often it is desirable to combine the living room and the dining room into one large area. This provides flexibility and economy of space. Functions of each room are not sacrificed in this manner either.

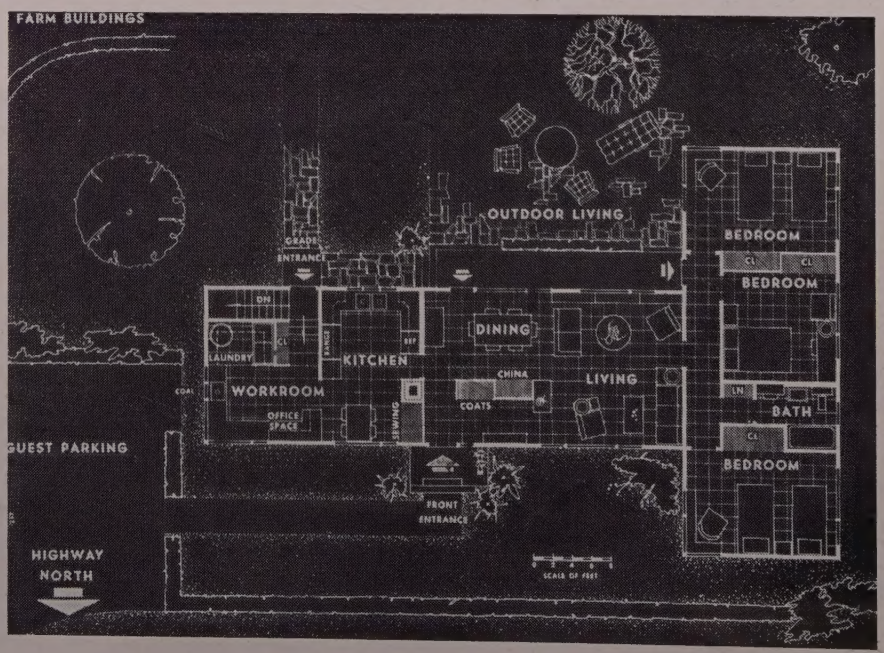
Don't forget about an outdoor living area. Much living pleasure can be obtained by having a terrace off the living and dining area. This terrace should have a southern exposure.

**The Basement**

The arrangement of the basement is influenced by the type of fuel to be used and how those muddy feet are to be taken care of. Facilities should be provided in the basement so that farm workers can clean up before entering the living area.

The fuel storage area for coal, oil, or wood should be on the same side of the house as the driveway. In addition, the heating plant should be adjacent to the

(Continued on page 16)




Floor plan of the modern farm home.


**Left: Modern schools with safe, efficient transportation for our children are a reality in communities where good farming is practiced. Right: ". . . The Community church with its resident pastor is the most important thing in creating good farm family living."**

*Profitable Farming Can Bring . . .*

# Good Farm Living for You

**By Ross Hostetter**

The greatest challenge to you, as young men and women of today, lies in choosing a career. Within the fields of agriculture and home economics there are many and varied fields which you may enter. Whether you are in high school, college, or out of school, many of you are faced with choosing your life's occupation.

There are many of you who will accept the challenge, and will choose farming as your career. If you do, there are many things that good corn-belt farming will give you. Good farming will in turn give you good farm family living.

A study of the long-time farm records kept in cooperation with the department of agricultural economics by M. L. Mosher, professor of farm management extension, shows that corn-belt farming at its best will pay for many things. That is, if you want to spend the money that is available for them. All of them are essential to good farm family living and for the raising of children, who will someday inherit the land.

**Churches are Important**

"In all of my forty years in farm bureau-farm management service work," said Mr. Mosher, "I have found that the community church with its resident pastor is the most important thing in creating good farm family living." The church with a trained and sympathetic pastor, who understands the farming peoples, can do much to raise the moral and ethical standards of our rural communities.

**Recreation Needed**

The next most important thing for creating good farm family living is to provide recreation for all farm people. Farming at its best will provide the necessary facilities and the opportunities for a healthy program of recreation and social life for young and old.

Hunting, fishing, travel for all, and dances for the young people, each and all have their place in the lives of farm people. Nothing will do more to develop the love of farm life than a recreational and social program.

**Modern Homes Provided**

Modern homes will do much to create good farm family living. Farming at its best will provide modern farm dwelling for every member of the family, including the tenants and the hired men. It is easy to see why homes that have electric lights and equipment, complete kitchen and bathroom plumbing, and a draft-free heating system, would go a long way to promote good farm family living. Electrical power and equipment is today becoming an essential part of every farm and farm home.

Farming at its best will enable farmers to do their part in building all-weather roads to every farm gate. Good roads are essential for adequite health service and protection. They are necessary in order that the doctor may come to the farm and give aid to those who are unable to travel. Good health service, including hospital, medical and dental care is an integral part of good family living.

Corn-belt farming at its best will pay the farmer's share of the cost of modern grade and high schools with adequately trained teachers for every farm child. It will give a college education to those who desire it, and it will provide ways and means for adults to continue their education.

Among the items of good living that corn-belt farming at its best will pay for is some kind of saving for old age. Some provide security by purchasing additional land, others by buying savings bonds or some other forms of investment, but regardless of the form of savings they choose, good farmers do not need to be dependent upon others for their care during the years before and after retirement.

You now have the picture of what comprises good farm family living. It is indeed a challenge to every farm family, and to every young, ambitious man or woman who chooses farming as his life's work.

The analysis of the thirty years farm bureau farm management service records prove all these things could be made available through farming the land of the corn belt. The records also show that the money is available for all of these things if you want to spend the money for them.

Therefore, the picture is one of reality, and it is available to you who will accept the challenge of farming the land at its best.

# Leather is Tops for Your Christmas Gift List

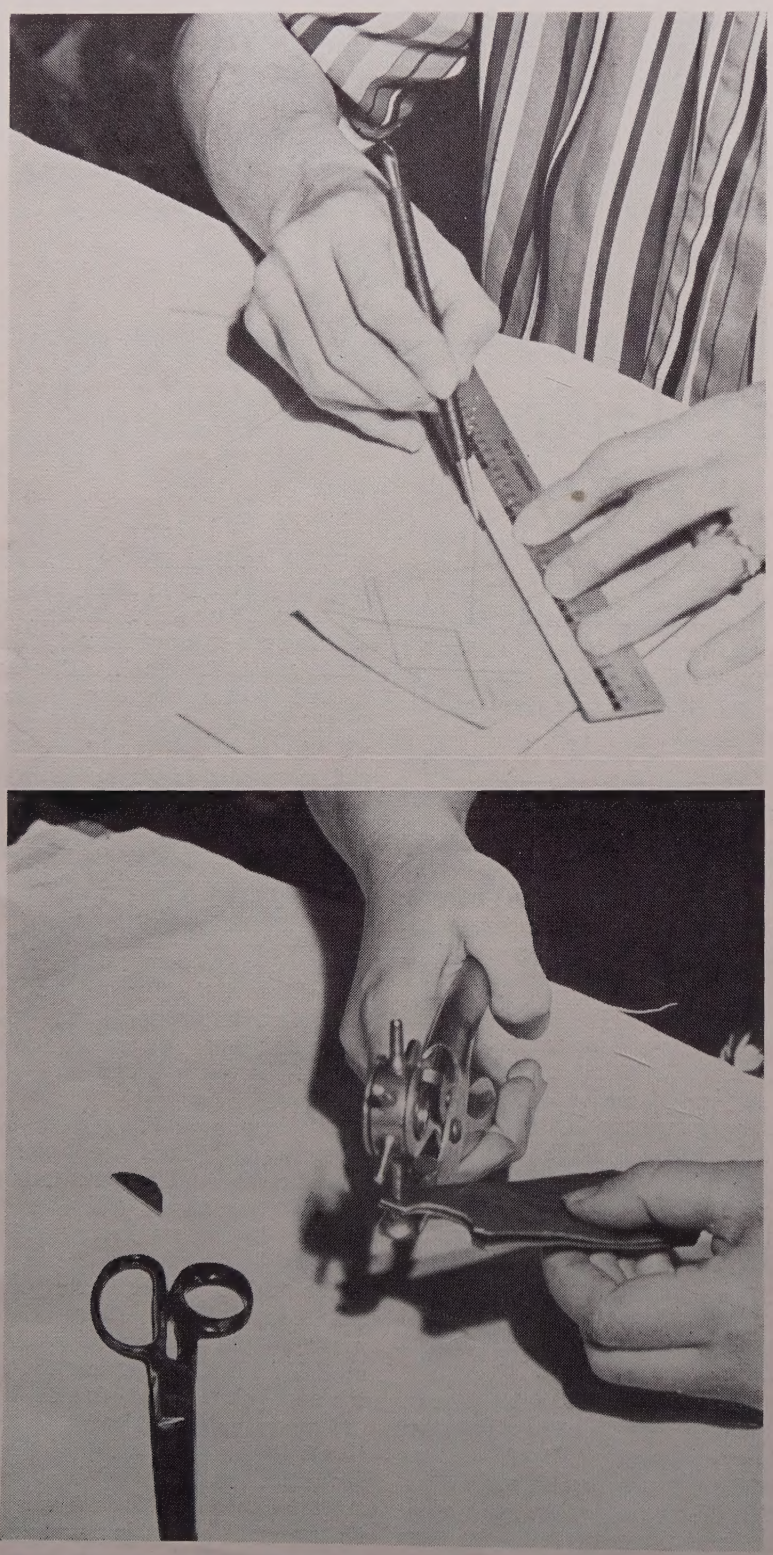
By Betty Braden

Do you have a Christmas gift problem? Or perhaps you are looking for an interesting hobby. Leathercraft can be your answer, according to Marion Kaeser, home economics extension specialist.

Make use of the wide variety of articles that can be made with leather. They vary from coin purses which can be made in about four hours to large carved leather notebooks which will be easier to make after you have had some experience in working with leather. A notebook can be made in about five evenings.

Some things to make are belts, key cases, stamp books, and bookmarks. Billfolds, autograph or photo albums, jewel boxes, large purses, book covers, picture frames, and camera cases are more difficult.

Leathercraft does not require any special abilities or talents. Another nice feature is that it doesn't all have to be done at one time.



**Upper—An idea plus leisure time provides long wearing leather articles. Lower—Clearly punched holes for lacing give a neater finished product.**

### Plan, Then Work Carefully

The first step in tooling is to plan the article on paper, leaving one-quarter inch at each edge for lacing. Then cut the leather the same size as the pattern. Draw the design on thin, strong paper and place it on the right or smooth side of the damp (not wet) leather. Trace the design with an orangewood stick or modeling tool and remove the paper.

Go over the design again, then press down the background, just where it touches the design, with the large end of your tool. When you have finished tooling, let the leather dry thoroughly. You are ready to stick the two pieces of leather together. Put rubber cement on the back of the edges which will be laced together, punch holes, and lace.

To carve leather, hold the blade of your knife at right angles to the dampened leather, and make a cut about one-sixteenth inch deep, on the lines of the design. Press open the cut with the sharp point of the modeling tool. With the flat end of the tool, work the opened edges until they are rounded. Stamp the entire background with a leather background stamp and a wooden mallet.

### Finish with Saddle Soap or Wax

You may color the leather with a special leather dye and a brush. To finish the article, use saddle soap, self-polishing or paste wax.

One of the nice things about leathercraft is that you can make the articles fit your needs. For example, you can make a camera case to fit your own individual gadgets as well as your camera. Covered boxes, such as jewel boxes, make very beautiful and distinctive gifts.

The kind of leather you select depends upon the article you are making, the amount you wish to spend, and whether you wish to tool or carve the design. For tooling, cowhide, calfskin, sheepskin, steerhide, Morocco, and goatskin are used. Calfskin is usually best, although it is also the most expensive.

Carving is popular for articles such as Western purses and belts. It is used only on larger, heavier pieces of leather. Leathers suitable for carving include carving cowhide and carving steerhide.

You will find the best selection of leathers at leather supply houses. Be sure that the leather which you choose

has been vegetable-tanned. The leather must be damp when you work on it. Shoe leathers cannot be tooled because they have been given a waterproof treatment.

Other materials and tools required are: lacing, such as goatskin or calfskin; designs; a cutting surface, such as heavy cardboard or an old breadboard; a tracing tool and a modeling tool (an orangewood stick can be used); a punch or wedge-shaped pointed nail; a wooden mallet; a sharp knife; rubber cement; a ruler; and a leather lacing needle. A steel square is also a good investment.

**Use Your Ideas for Designs**

A good design and accuracy are the most important things in making a beautiful piece. You may exercise your artistic talent to make your own designs, or you may use designs found in fabrics, wallpaper books, or needlework patterns.

You may need to change the design to fit the size and shape of your article. Carved leather designs are raised more from the background than tooled designs. The best carved designs have only a little background space. A simple design is usually the most effective.

You'll find leathercraft a fascinating and appreciated way to solve your gift problem, whether you plan to use it for this year's last minute gifts or are looking ahead for ways to leisure time. Good luck in your venture of tooling and carving.

# Rabbits Need Limestone Too!

**By Lyle Toepke**

White rabbits are paving the way to a better understanding of feed values. These pink-eyed, furry creatures are now being used to show the difference in the nutritive value of feeds produced on soils of different levels of fertility.

The feeds used in this experiment were grown on the Newton, Ill., soil experiment field. Plots on which the lespedeza hay, soybean hay, and wheat were grown were one-fifth acre. They had a thirty-year record of the amount and kind of soil treatment. Limestone, phosphorus, and potassium were applied to one set of plots while only phosphorus and potassium were applied to the other nearby plots.

The ration consisted of 49.5 per cent hay, 49.5 per cent wheat, and 1 per cent salt. Feeds grown on the limestone-phosphorus-potassium treated soil made up one ration and feeds grown on the other plot made up the second ration.

The rabbits used were typical pair litters. One litter received feeds from the limestone - phosphorus - potassium treated soil and other litter received feeds from the phosphorus-potassium treated soil. Feeding began at the beginning of gestation and was continued until the young rabbits were fifteen days old. The milk from the mothers was the only source of nutrients for the young.

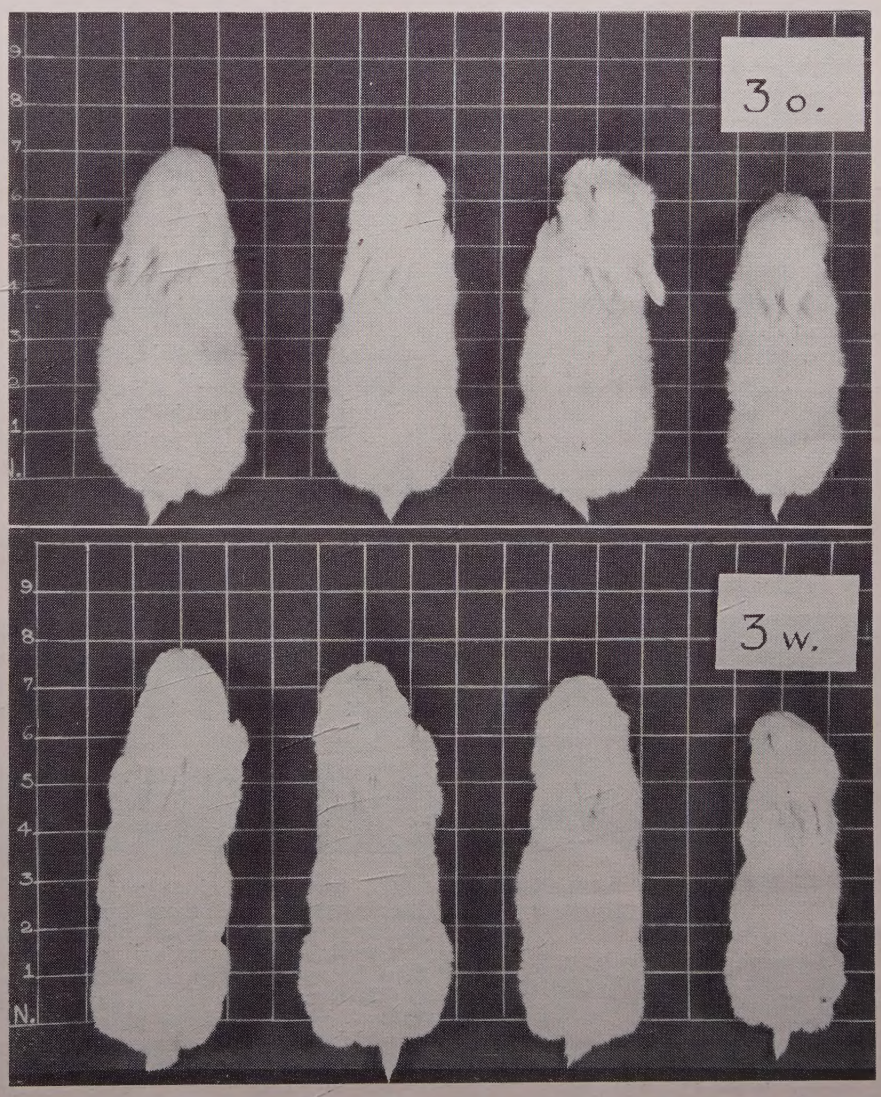
The results of this pilot study shows some interesting facts. The ration from the limestone - phosphorus - potassium treated soil excelled the ration from the phosphorus-potassium treated soil. This was shown by larger litter size, higher apparent digestibility of the nitrogen, larger daily gain in weight of the young, and higher protein contents of the ration.

When the carcasses of the young were examined the ash and nitrogen contents were larger in the rabbits that received rations from the limestone-treated soil. Also the body lengths of the young were greater from the litter whose mother had received feeds grown on this soil.

To insure that the mothers were receiving only the feed intended for them, all of the weeds were carefully picked out of the hay before being fed. The amount of weeds was about fifty per cent less on the limestone-treated soil as compared to the non-limestone-treated.

It must be remembered, however, that this was just a pilot or preliminary study as compared to what is hoped to be carried on later with dairy cows. Rabbits had to be used because they don't consume large amounts of feed and there is less expense involved. Only a limited supply of feed is available from where the record of the soil treatment is known for such a length of time.

A complete account of the experiment is in the November, 1948, Journal of Nutrition.




**Above: The mother of these rabbits received a ration from untreated soil. Below: The mother of these rabbits received a ration from limestone-treated soil.**

# Toy Shopping Problems Solved

By Mary McPherson

It's a week after Christmas. The house is beginning to look straight again. Turkey left-overs are gone, and the children are back in school. Even little Susie is content to play quietly with her rag doll.

If you had only known that this toy would take all of her attention. How much time and money you could have saved on her Christmas shopping alone. From now on you will carefully consider the age and the interest of the child for whom you are buying.

**Dolls for All Ages**

Dolls are the classic toy for all ages. A gay calico or oil-cloth doll will delight the one-year-old and satisfy his needs to look, bite, and hold. A three-year-old is beginning to take an interest in other people. He is learning by imitating what they do.

His doll must have pajamas when it goes to bed and a coat when he takes it out to play. Unbreakable "magic-skin" can withstand the jerking and poking of putting the arm in the armhole. Learning through imitation takes in a much larger field for the eight-year-old. How can one have a beauty parlor without a doll with real hair?

A child needs only an idea to start him on hours of imaginative play. Give him a suggestion through a telephone, plastic dishes, a broom, or doll carriage. It's much easier to play house when you really have the equipment.

A parade of a wooden mother duck and her little ones fastened together, or a bright red wheelless train engine, can be pulled by a crawling or walking one- or two-year-old. The base must be wide enough to prevent its turning over.

Safe and sturdy are the two requirements for a tiny tot's toy. A toy may go into the mouth. Be sure the paint sticks to the toy instead of flaking off in the child's mouth. The fewer the pieces to the toy the fewer places to pinch fingers. Glass and sharp metal toys have ways of breaking and cutting. Cardboard comes apart when wet. Your best buy is wooden or plastic toys.

**Trains for Both Boys and Dads**

Everyone knows a train runs on a track. But it's more fun just to be able to push the engine around anywhere—at least before the child is six. Then reality comes in to his reasoning and he enjoys a track for his train. When a boy is eight, both he and his dad can enjoy an electric train and track with tunnels and switches.

Finger muscles are strengthened by picking up and holding objects. Red or blue blocks, colorful nests of boxes, or pegs to hammer into a board will hold his attention. Toys of this kind may be used to quiet the child before he eats lunch. They give him something to do when he is dressed and waiting on dad and brother. He is quiet, is keeping clean, and at the same time is learning to solve his own problems in putting parts together to make a finished object.

Remember that all the time the child is learning. Just the feel of clay, or the results of water paints will be a fascinating experience for him. What a funny sound blunt scissors make cutting bright red or orange paper!

Large crayons can be standard equipment when you go visiting. No color book is necessary because the young child lacks enough eye-hand control to stay within the lines. Instead, supply him with plenty of sturdy brown wrapping paper.

If there are no sidewalks or level areas where you live, a wagon is a much more practical gift than a tricycle. A child of two and over will be thrilled by either of these. A bicycle is easily handled by an eight-year-old.

**Plenty of Fresh Air for All**

At least five hours of every day should be spent out-of-doors. If you have a yard and sandpile the time will go quickly. Spools, spoons, tin gelatin molds, wooden rolling pins, and old baking dishes will transform the sandbox into a wonderland. Slides can be bought or made from smooth painted wood well supported behind and underneath by boxes.

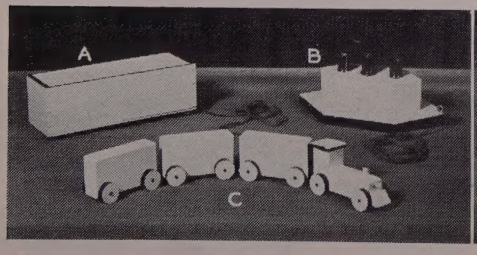
A board swing can hang from a tree. A wide board supported about six inches above the ground gives the child a place to jump. A rope ladder from a tree gives him a place to climb. A child needs to use his muscles to develop them. It is better to provide a safe place for him than to leave to him the choice of where to exercise.

**Picture Books for Children**

Grownups have books. A child needs one that is his very own. A linen book of animal pictures can withstand a one-year-old's roughness. A three-year-old can turn pages and likes picture books of animals, children, trains. If there is any print, it need only be a word or two to name the picture. Books by Lois Lenske, Marjorie Elack, and Wanda Gad are favorites. Mother Goose appeals to all ages.

The toy you select should be colorful with plenty of red, green, yellow, or orange. It will be much more interesting if it isn't a wind-up toy. A child likes, and needs, to be active, and a toy that requires no effort on his part teaches him habits of laziness.

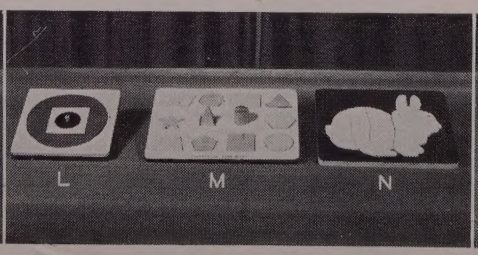
It's fun to buy toys for children! Your toy, carefully selected can be a favorite and still help the child to learn and grow. Remember that you are buying, not for yourself, but for him.




**(A) Gliding box. Made from a 5-pound cheese box, 4 furniture glides, a screw eye, and a shoestring.**

**(B) Tugboat. 11 inches long, 6 inches wide. Requires 3 pieces of ordinary lumber and 3 spools.**

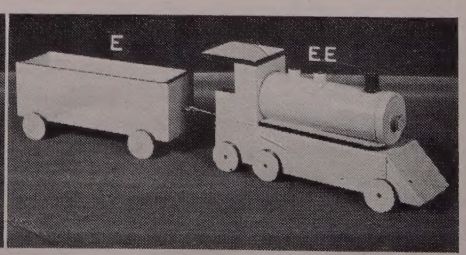
**(C) Block train. Made from several small blocks of wood, each car about 2½ inches high and 4½ inches long. Rolls easily on wooden wheels.**




**(L) Concentric rings and squares. 9 inches square. Made from thin wood such as plywood and a dowel pin. Finishing the sections in two colors provides contrast between rings and squares.**

**(M) Geometrical form board. 11-by-14-inch base. Cut from plywood and 2 small blocks.**

**(N) Form-board rabbit. Base is 10½ inches by 12½. Made almost entirely with a coping saw and plywood.**




**(E) Cheese-box car. Built chiefly from a cheese box, a screw eye, and material for wheels. This and the cheese-box engine can be hooked together and pulled with a string.**

**(EE) Cheese-box engine, Materials needed include a cheese box, cookie can, several pieces of thin wood such as plywood, 4 spools, and some stove bolts.**

**(From Illinois Circular 546)**


# . . . Conservation Style!

Here is mulch-culture tillage at its best. It's the direct-connected McCormick-Deering HM-17 subsurface cultivator, built for use with Farmall H, M, or MD tractors equipped with Farmall Lift-All.

The machine consists of a long 2-inch square tool bar, with 5 spring-release standards attached. These are regularly equipped with 24-inch sweeps and 18-inch notched rolling colters. The HM-17 also is regularly supplied with two gauge wheels—assuring uniform cultivating depth in irregular terrain. It is raised and lowered hydraulically. It is easily attached and detached.

Note how this subsurface cultivator, pulled by the Farmall MD tractor, ideally roughs the soil surface—and leaves the straw and other crop residues on top. The colters slash through trash and straw to prevent time-wasting clogging. The sweeps work 3 or 4 inches below the surface . . . to kill weeds and open the soil to minimize run-off during heavy rains.

Here is a stout defense against soil erosion by wind or water. Here is another contribution to agricultural progress by International Harvester.

*Listen to James Melton on "Harvest of Stars" every Wednesday Evening over CBS.*

This modern building symbolizes the expanded service facilities of IH dealers throughout America.

**INTERNATIONAL HARVESTER**

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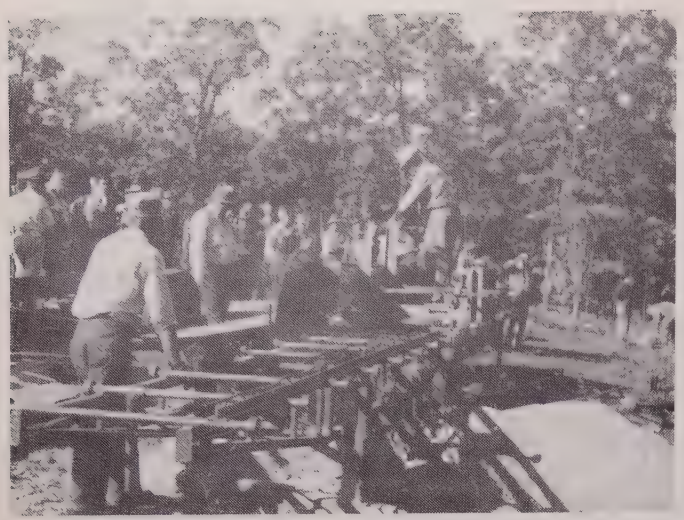
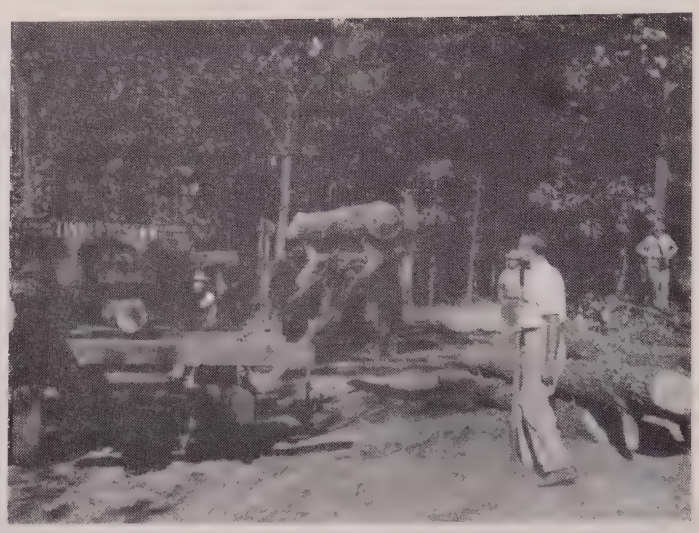




**Left: Portable lumber harvester. Sets up in two hours; taken down in one-half hour. Right: Two-man "timber-tosser" will load a truck in 10 minutes.**

# EASIER LOGGING FOR ILLINOIS FORESTERS

**By Orville Sauder**

Much of the rolling, eroded land in the state of Illinois needs the protective covering of trees. Over six million acres of this farm land should be forested. Trees planted on this land can be highly profitable. Profitable enough, in fact, to successfully compete with corn and other crops on good land, according to L. B. Culver, extension forester of the College of Agriculture.

The average farmer today sells his woodlot resources as standing trees. Culver states that a farmer can increase his profits on lumber from 100 to 250 per cent by selling wood harvested. In the past this required a great deal of time and expense.

Now, however, newly developed logging equipment makes the job a lot easier. By using this equipment and utilizing extra labor in slack seasons, a farmer can greatly add to his lumber profits. Any farmer with fifteen or more acres of wood can afford to invest in enough machinery to make this possible.

On Ocotber 14, the first logging show in the state was held at Kaskaskia experimental forest near Harrisburg. This show introduced new machines and logging methods of interest both to farm woodland owners and to loggers. Demonstration of equipment developed by farm woodsmen high-lighted the show. Equipment manufacturers also had machinery in use and on display.

Among the new equipment of especial interest to farmers are the new chain saws. Prior to the war, crosscut saws with steel wedges and steel malls were standard. Now one-man and two-man chain saws are replacing the old type saws. These chain saws, demonstrated at the logging show, are equipped with either gasoline engines or electric power. Along with these saws, magnesium wedges and leather covered malls are used.

Methods of skidding have been improved. Use of skidding pans and log carts with hydraulic lifts are two new ways now used to reduce skidding resistance and to keep logs cleaner. Labor and time is usually saved by skidding tree length pieces and cutting them into shorter pieces at the loading point.

Winches have been developed that may be used for the entire bunching, skidding, and loading operations. Cable-skidding is done with the "Logger's Dream." It has a dragline and rehaul which enables it to quickly skid in a pile of logs and load them on a truck.

There are two main types of truck loading devices. One is the crane type of loaders, which have been greatly improved since the war. Hydraulic self-loading truck devices being new developments, make up the other group and are quite convenient for loading.

A new roller mill, the Jackson lumber harvester, is a sensational new machine that can be made ready for moving in half an hour. Formerly, mills usually required two to three days for disassembling and getting ready for transporting.

There are smaller, but valuable new devices that are also important. A mine detector is used to locate metal in logs and thus protect the blades of the saw mill.

There are some trees in which ordinary wedges are difficult to use. Explosive wedges consisting of circular pieces with chambers containing black powder connected with fuses are used to solve this problem.

These devices were all demonstrated at the logging show. Some of them are applicable to farm needs and some are not. A farmer having forest trees may invest in equipment according to the size of his lot.

Farmers would be far ahead to utilize their own wood rather than to sell standing trees and buy finished lumber. Forest trees may provide golden opportunities for farmers who use them as a means of producing substantial dividends from otherwise poor land.

## *Foot and Mouth Disease Is Here to Stay*

Foot-and-mouth disease is in Mexico to stay, believes Dr. G. W. Hess, of the U. S. department of agriculture. Hess spoke recently to the staff of the College of Veterinary Medicine on his experiences with the disease in Mexico.

"When the Americans first went down to Mexico, they tried to eliminate the disease by slaughtering infected and exposed cattle," he reported. This method had proven successful in eliminating the disease in an outbreak of foot- and-mouth disease during World War I and in California in 1924-25.

During the California outbreak of the disease, more than 58,000 cattle, 20,000 swine, 28,000 sheep and 1,300 goats were slaughtered. They had all contracted the disease or been exposed to it. Wild deer were also discovered to be infected and more than 22,000 of them were destroyed in the Stanilaus National forest in California, to prevent their reinfecting the cattle.

**Eradication Methods Unsuccessful**

The method of eradication by destruction had been successful on the comparatively small scale outbreaks in this country, but the disease was widespread in Mexico. This method of control had to be abandoned.

Mr. Hess said that it would have been necessary to slaughter 7½ million cattle to eliminate the disease. At the time of abandonment of the slaughter method of control, 12,000 cattle a week were being sacrificed in the district under Dr. Hess' supervision. It included the state of Jalisco in west-central Mexico and parts of several other states.

"Another reason why the slaughter program was not effective was that many farmers refused to cooperate, hiding their cattle rather than allowing them to be killed," he said. The movement of these cattle spread foot-and-mouth disease faster than it would have spread if they had been left alone.

At present an attempt is being made in Mexico to control the disease by vaccination and quarantine. Two lines running east and west have been set up. Animals south of these lines are being vaccinated. There is no foot-and-mouth disease north of the quarantine lines, and no cattle are allowed to go from the southern to the northern part. This northern line is about 300 miles south of the United States border.

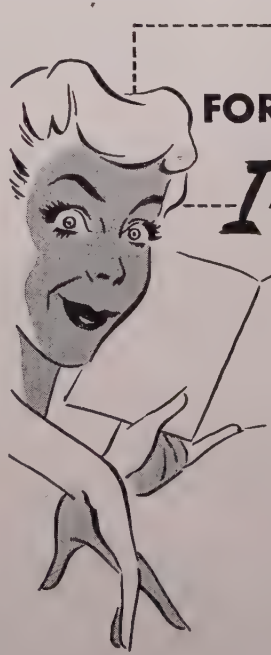
Owing to the great infectiousness of foot-and-mouth disease, experiments with it are not conducted within the United States. Any work being done by our government with the disease is carried on in foreign countries. The virus which causes foot-and-mouth disease is not killed by refrigeration and has been proven virulent in hog and cattle carcasses 76 days after slaughter, even when these were kept at freezing temperatures.

**Disease Symptoms**

Signs of the disease are blisters on the tongue, lips, cheeks and palate of the animal, above the claws of the feet, and on the teats and udder. Animals infected usually are noticed drooling heavily and smacking their lips. Contrary to common belief, the disease does not attack the hooves of the animals, but only the soft parts of the foot.

The Mexican type of foot-and-mouth disease is not so virulent as the type found in other countries, Dr. Hess said. It kills only about two per cent of the cattle infected.





# Woman's Work is Getting Done

**WHAT'S YOUR WASHDAY SCORE?**

1. Do you have a place to sit down?
2. Do you time laundry loads?
3. Do you wash in a pleasant place?
4. Can any part of this job be left out?
5. Can I do my housework before I start?
6. Can I reduce interruptions?
7. Do I save energy wherever possible?

Every woman knows that doing the weekly laundry is one of her most energy-consuming duties. Therefore, she should try to eliminate drudgery wherever possible. Approach laundering as a challenging game. Always try to improve methods—can you answer "yes" to the questions listed above?

First of all, develop a healthy attitude about washing clothes. Forget that your grandmothers invariably did huge family washings every Monday. Their families' needs were probably quite different from ours.

Do not feel that Monday is necessarily washday. If Sunday has been a trying day, the homemaker is probably tired and the house is in disorder. Consequently, Tuesday has become a popular washday with farm women.

Have a chair or two handy for short rest periods while doing large washings. Reduce interruptions by seeing that the children have interesting activities elsewhere.

Perhaps you can make your laundry corner as attractive as your gay kitchen. Ugliness seems to magnify the task. Working in a pleasant spot lightens your spirit—if not the job.

Would a coat of light paint, another window, or some colorful plants help? Maybe more artificial lights are needed.

Provide proper ventilation—an additional window or a ventilating fan may be installed. Create a sense of freedom and spaciousness.

**Sort Clothes on Table**

While improving your laundry techniques, remember to sort the clothes on a table to eliminate bending to the floor. Have the stain removal kit nearby to remove spots before the hot water in the machine sets them.

When it comes to hanging out the clothes, try to have an attractive, handy place. A level lawn with grass cut short helps keep fallen clothes from getting dirty.

Try to hang clothes lines near the door leading to the laundry to reduce unnecessary steps. New lines hung at a suitable height may save much time and work. Stationary, rustproof wire makes the best line. Stretch the lines taut and long enough to dry all the clothes at the same time. Wipe the line occasionally with a cloth dipped in ammonia or kerosene.

**Don't Stoop to a Clothes Basket**

Do you know that you can save one-third the energy ordinarily used in hanging up clothes by setting the basket on a cart? A child's wagon, an old baby-carriage frame, or homemade cart will help eliminate stooping and bending.

A bushel basket is easier to lift and carry than an ordinary clothes basket. It is small enough for the heavy weight of wet clothes, yet large enough to make few trips to the line.

## Veterinary Medicine College Opens Officially

The University of Illinois College of Veterinary Medicine has officially opened. The first freshmen have enrolled in the professional courses that will lead to the degree of doctor of veterinary medicine, four years hence.

After two years of veterinary training, the degree of bachelor of science may be conferred upon the student. Before being accepted in the College of Veterinary Medicine, each student must have completed two years of preveterinary study.

The first professional veterinary class has twenty-four students, which is the capacity until more space for classrooms and laboratories is provided. All are veterans of World War II.

Until further building is completed, the College of Veterinary Medicine will be located in two buildings on the Urbana campus. One is the Veterinary Pathology laboratory, which is located on the south campus. This one-story brick building houses the diagnostic service of the department of veterinary pathology and hygiene and one teaching laboratory.

The other building, a former residence located at 805 West Pennsylvania avenue, is being used only temporarily. This building houses the administrative offices and research and teaching laboratories.

The college has two new buildings planned. One of them will be a basic science building which will house the departments of veterinary anatomy, veterinary pathology and hygiene, and the department of veterinary physiology and pharmacology. The other new buildings will be used by the department of veterinary clinical medicine and the diagnostice service of the college.

When these two new buildings are completed larger veterinary classes will be accepted.

## Illinois Farmers Observe Cattle Feeding Operations

The risk involved in feeding $2.50 corn to $25 to $30 feeder cattle during the past year has affected the methods of feeding practiced by Illinois farmers. Some have attempted to reduce the hazards by short feeding their cattle and getting them back on the market before prices decline. Others have tried to stabilize their operations by economizing on feed, through increased feeding of roughage in winter, and more extensive use of pasture during spring and summer.

The outlook for the coming year finds the prospective cattle feeder just as vulnerable. Although feed prices have declined from last year's high, the price of feeder cattle has risen and the risks are just as great.

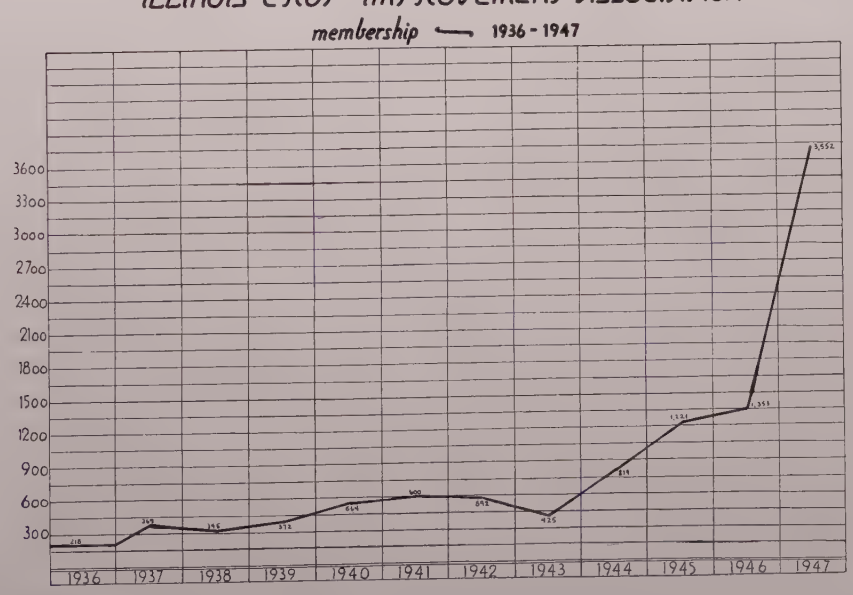
With these prospects in view, 600 cattle feeders from Illinois and surrounding states gathered at the University to attend the twentieth cattle feeders' meeting on October 22. Since 1910, these meetings have been designed to demonstrate the results of experiments related to cattle feeding operations.

The morning session was held at the beef cattle barns on the University South farm. Roscoe R. Snapp, professor, and Fred C. Francis, assistant professor of animal science, outlined feeding and grazing tests conducted during the past year that would be of benefit to cattle feeders.

Francis described a cooperative test between the beef cattle and meats divisions of the Illinois Experiment station to determine the amount of corn and the length of time required to bring known grades of cattle to certain specified slaughter grades. This year's test, involves choice steer calves which are being fed to prime, choice and good finish.

The lots fed to good and choice grades had already been slaughtered. The steers being fed to prime grade had been in the feedlot over 340 days and had been fed an average of 63.2 bushels of shelled corn per steer.

They had just about reached a prime finish at the time of the demonstration. The steers fed to choice grade reached that finish with 38.9 bushels of shelled corn in 235 days and those finished to good grade with 21 bushels in 145 days.




**The increase in the membership of the Illinois Crop Improvement Association is evidence of the interest of Illinois farmers in the crop improvement program for better seeds.**

# STERILE SOWS ARE NOT ACCIDENTS

By Ronald Elliott

Generally speaking, swine breeders have never been able to expect as many litters as the number of females saved for breeding or even bred. There always seem to be some females that never farrow for some reason, possibly because they never conceived, or possibly because they conceived but did not carry their litters to term.

There is also a considerable loss to the breeder by sows farrowing very small litters or a large litter where most of the pigs are born dead. This results in the breeder feeding and caring for some females that are below average in reproduction ability, or cannot reproduce at all. This of course increases the production cost per pig for the breeder.

Through research it may be possible to enable the breeder to eliminate these females during or even before the breeding season.

**Research Begins**

With this in mind A. V. Nalbandov, J. L. Krider, W. E. Carroll, and R. F. Wilson of the animal science department, started a research project in the fall of 1947. Prior to that time nine Hampshire sows that had failed to conceive during the 1946 fall breeding season at the Illinois station, were slaughtered and their reproductive organs examined for abnormalities. The predominent apparent cause of reproductive failure in these females was cystic ovaries.

Toward the start of the 1947 fall breeding season 34 swine breeders in the state within a fairly close radius of the University were contacted by letter. They were asked if they desired to sell to the University sows and gilts which had failed to conceive or had not been observed to come in heat.

It was essential that the University also obtain records of these females as to the number of services they had received in their various heat periods. Of these 34 breeders, 23 signified they would like to cooperate.

**Breeders Cooperate**

During the fall, winter, and spring of 1947-48, 32 presumable sterile females consisting of sows and gilts of four different breeds were bought by the swine division from cooperative breeders and brought to the University. They had failed to conceive to service by the cooperators' boars in from 1 to 4 periods.

Also placed on the study were 14 females from the University swine herd. They were placed in separate lots for sanitary measures. Two 1-year-old boars were obtained from the University herd and placed in a lot next to these females.

Of the 44 females, 24 (54.5 per cent) conceived to the project boars and were slaughtered by the meats division, 25 to 30 days after conception. The reproductive organs were examined at this time and records made for a statistical study at a later date. The remaining 20 (45.5 per cent) females failed to conceive to service by the project boars in two consecutive heat periods. They were then slaughtered shortly after the end of their second heat period and their reproductive organs handled in the same manner as the pregnant females.

In all cases except one, apparent causes for reproductive failures in the latter group of gilts and sows were revealed upon slaughter. They included: structural abnormalities present at birth, infection of swine brucellosis, and abnormal functioning of part or parts of the reproductive system.

**More Research Needed**

As to the possibility of this research assisting the swine breeder to eliminate his "boarders" before the breeding season actually set in, no statements can be made as yet. It is thought that possibly outward indications have been found to enable the breeder to eliminate these animals with cystic ovaries or during the breeding season. However, far more work will have to be done on this possibility.

## *New Process Eliminates Bacteria from Milk*

Any person who has heated milk can tell you that this milk will have a cooked flavor and be scorched if it is heated above 160 degrees F. A proposal to pasteurize milk at 300 degrees F. sounds like a scientist's dream.

It has been the hope of the dairy technologist and bacteriologist that milk could be pasteurized at temperatures in the 260 degree F. range because that would lead to a milk that is nearly bacteria-free. However, such high temperatures introduce many problems that ordinary pasteurization temperatures do not bring about and equipment has not been available that would satisfactorily heat milk to such high temperatures.

In 1942, Mallory patented a process that would enable milk to be heated continuously at 300 degrees F. for 5 seconds. An experimental unit, called the Mallorizer, built on his principles was made by the Illinois Creamery Supply company of Chicago. With this unit available to test the effects of such high temperatures on milk, an Illinois graduate student and the Dean Milk company of Rockford performed some experiments in 1946.

At present, further experiments are being carried on here at the University with a unit similar to the one used in Rockford. Both milk and ice cream mix will be pasteurized at temperatures in the 200-300 degree F. range and times ranging up to 5 seconds will be used. Such temperatures produce physical and chemical changes in milk. Enzymes in the milk are reduced in activity, a cooked flavor develops, the milk does not cream as readily, and amounts of vitamins $B_1$ and C are lowered in the milk.

Bacteria have long been recognized as the source of many undesirable as well as desirable qualities in milk. If the Mallorizer enables the dairy technologist to secure a large reduction of bacteria numbers without causing undesirable defects in the milk, then it will take its place in the dairy as an important tool in the industry's aim to improve milk quality.

# New Developments Increase Sunflower Product

By Bob Ingersoll

It's found growing in back yards, at the edge of your garden, and in the fence row, but what is it? Why it's a sunflower—nothing important—just another weed that looked too nice to cut down.

Yes, that's what we've been thinking here in Illinois and the surrounding states for some time. Progress in agriculture, however, depending partially upon the idea that we must make the best use of feed and food crops that can be successfully grown here, demanded that we see the sunflower in a different light.

During the period 1927-1930 the sunflower was tried as field crop in several different areas in Illinois. Difficulty arose, however, because of the lack of demand for the seed. The importance of the seed as a source of protein and fat was not yet realized by the stock food manufactures. Having no source for profitably marketing their product, the farmers were forced to eliminate sunflowers from their rotation.

As time passed and industries developed, other countries took up the challenge and began experimentation. Sunflowers soon became an important crop in Russia, and is fast becoming so in Canada.

Research made available many new practical uses of the seed—products in our every day life. The oil being of very fine quality can be used in the manufacture of oleomargarine, lard substitutes, salad dressings, cooking oils, and soaps. The meal is a direct competitor of cottonseed, linseed, peanut, and soybean oil meal and is interchangeable with them in stock feeds.

At the present time the University agronomy department is trying to develop their own inbred lines to produce a hybrid variety of sunflower. Their goal is to develop short growing types with high yielding ability, low hulling percent, high oil content, resistance to lodging and shattering, and resistance to insects and diseases.

As they draw nearer each year to reaching this goal—watch the fields of the Illinois farmer. We may soon realize that the sunflower can became a major crop.

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Illinois has one of the largest cheese-producing plants in the country at Freeport.

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Why not send a gift subscription of The Illinois Agriculturist to your parents?

**Sunflowers in full bloom on an Illinois farm.**

## Arrange for Convenience . . .

(Continued from page 4)

fuel storage and near the basement stairs.

By putting all their findings into a workable plan, the Small Homes council and the department of agricultural engineering have produced the basic farmhouse which is pictured here. It is comprised of two joined rectangular units, which can be shifted around to provide proper orientation to all farm situations.

The architecture of the farmhouse is contemporary—or sometimes called modern. All sides of the house are pleasing. Exterior finishes may be of a wide range of materials—stone, brick, wood siding, shingles, or asbestos sheets.

The trend today is for homeowners to want more glass areas. Large windows which are double-glazed without sacrificing fuel-savings and comfort. The windows are of two types—those that open, and those that are fixed (picture windows).

The University of Illinois farmhouse is designed modularly—with dimensions of four-inch units or multiples thereof. The house can be built with a minimum of cutting and waste since modular planning eliminates the customary fractional dimensions both in the house plan and in the manufacture of the building materials. The modular principle is just beginning to be adopted. Its widespread adoption by manufacturers would increase the efficiency of the house plan.

This farmhouse is being built by the University of Illinois on its experiment station at Dixon Springs. Blueprint plans are available for one dollar from the department of agricultural engineering, College of Agriculture.

## *All Vegetables Deserve Good Treatment*

**By Jane Roe**

Every year many young brides begin their career as homemakers. This means that preparing food is one of their major activities. Cooking can be a headache to some of these girls, and more than likely, a stomach-ache to their husbands.

The inexperienced bride is to be pitied when she does her experimenting three times a day with her mixing spoon, her own temper, and the family food budget.

Some foolproof rules for cooking, if learned and correctly followed would prevent many of the costly and poor products the beginner turns out. There are rules covering any type of cookery desired.

Vegetables in the old days were sometimes called "garden sauce" when meat and game formed the major part of the daily diet. Today vegetables are no mere accompaniment to meals. Dietitians demand two a day, not counting potatoes. If, however, the vegetables are not properly cooked to retain their nutritive value, what is the sense of eating them?

**Can You Say Yes?**

If you are a good vegetable cook you can answer "yes" to the following questions. Do you have the water boiling before adding the vegetables? Do you cook the vegetables in the smallest quantity of water possible? Do you avoid cutting the vegetables in small pieces before cooking? Do you add the salt at the beginning of the cooking period? Do you cook the vegetables at a moderate rate until tender and retain the characteristic texture of the vegetable? Do you serve the vegetable immediately? Do you use the cooking water?

It is the extravagant American custom to throw away the water in which vegetables have been cooked. This custom has been responsible for the remark that the strongest feature of our country should be our sinks, since so many vitamins are fed to them.

**Color Adds to Palatability**

One of the things affecting the cooking process is the color of the vegetable. Color is affected by many things: the nature of the coloring matter itself, the hardness of the cooking water, the presence of minerals such as iron in the water, and the method of cooking.

Yellow vegetables keep their color as long as they are not over-cooked. White vegetables become dark if they are over-cooked, especially in water that contains iron.

Red vegetables keep their color best in the presence of acid. If beets and red cabbage have to be cooked in hard water, it is a good idea to add a little vinegar to the water. Green vegetables keep their color best when cooked in hard water with the cover off the pan.

In the standard cooked vegetable the pieces are uniform and attractive in size. The original color has been retained. The vegetable is free from excess water and is tender but holds its shape. It is well seasoned and the natural flavor of the vegetable predominates.

Vegetable cookery is only one of the kinds of cookery that has simple easy rules. If the inexperienced bride follows these rules, she need not feel quite as insecure and be discouraged in her trial-and-error period.

Food preparation is one of the arts that can be cultivated and through practice be perfected.

# ALLIS-CHALMERS MODEL G for—

**Some jobs on ALL farms**
**... ALL jobs on Some farms**

## A New System of Motorized Farm Tools—

### JOBS for the MODEL G

1. Replaces that last team of horses on all light jobs.
2. An economical "chore" tractor — uses only 2 to 3 quarts of fuel per hour.
3. An all-round tractor for small acreages — plows, discs, harrows, plants, cultivates, mows and does belt work.
4. Ideal for planting and cultivating in any desired row spacing.
5. A handy auxiliary tractor on large farms.

### A NEW KIND OF FARM POWER

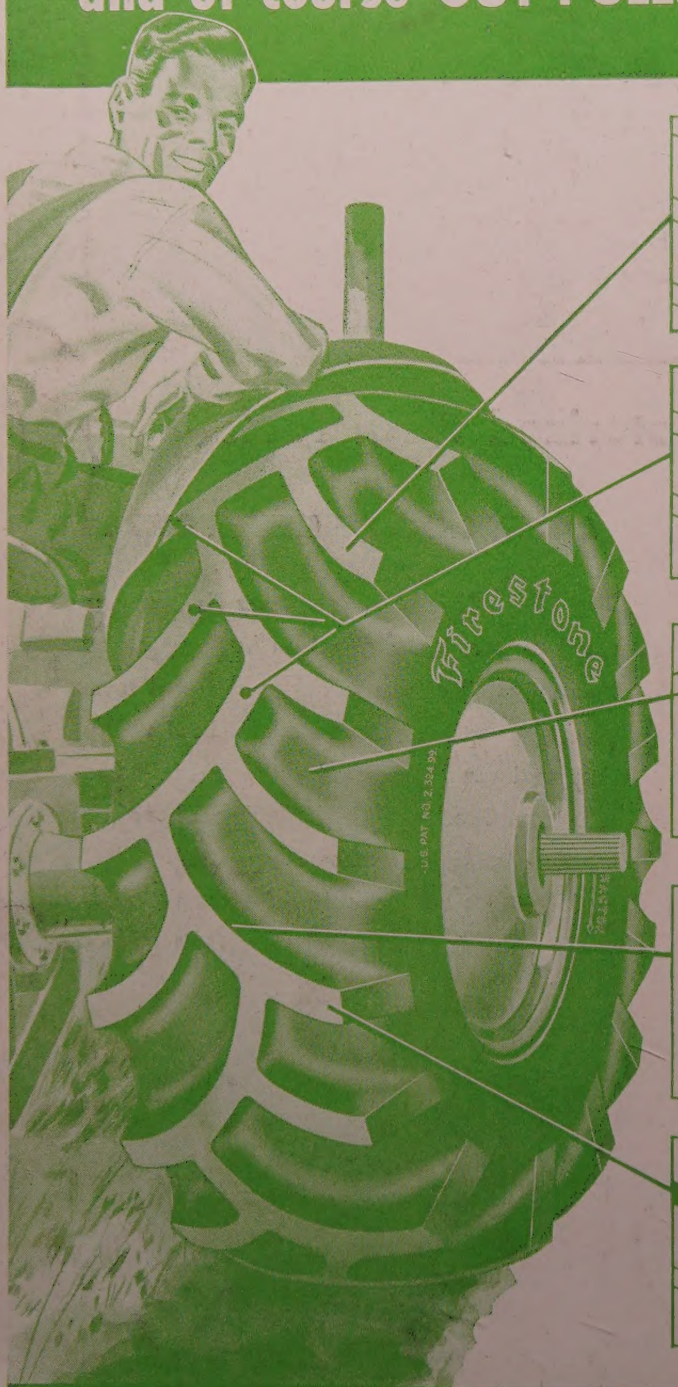
The Model G is not just another size, another small tractor, but a new idea in farm power. Rear-mounted engine and front-mounted tools permit the operator clear, straight-ahead vision. Any tool can be attached or detached in five minutes or less. The special ¾ mile per hour low speed replaces hand methods for precision tillage. Such features mark the Model G as the most modern development in efficient farm power.

### FULL LINE OF TOOLS

- 5-foot Single Action Disc
- 1-section Spring Tooth Harrow
- 2-section Peg Tooth Harrow
- 2-row Drill Planter
- Attached Moldboard Plow, 12-inch Bottom
- 5-foot Mower
- 1-row Cultivator
- Multiple-Row Ground-Driven Seeders, Power Driven Seeders, Independent-Gang Cultivators
- 80-inch Single Tool-Bar adaptable to many combinations of cultivating equipment; also 60-inch Double Tool-Bar

**ALLIS-CHALMERS**
TRACTOR DIVISION — MILWAUKEE 1, U. S. A.

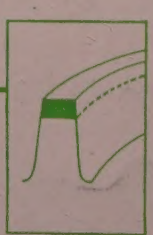
# It's Plain as Day — Why the Firestone CHAMPION Ground Grip OUT CLEANS and of course OUT PULLS any other Tractor Tire




***It outcleans and . . . of course . . . outpulls because the traction bars curve outward from the center of the tire*** *to make a wide open exit for mud and trash which are easily forced out of the tread wells by the rolling, flexing action of the tire.*

***It outcleans and . . . of course . . . outpulls because it has no open centers to catch trash*** *which is generally the foundation for a completely filled up tire. Instead of filling up, the Champion Ground Grip remains clean and takes a "center bite" right in the heart of the traction zone.*

***It outcleans and . . . of course . . . outpulls because the tread wells are contoured to eliminate those sharp corners, angles and flat surfaces*** *where mud and dirt could wedge and stick. There are no mud pockets.*



***It outcleans and . . . of course . . . outpulls because the tread bars are up to 24% higher.*** *They take a deep, clean bite which forestalls slippage. A tread that does its work without slipping does not fill up. A tire that does not take a deep, full bite is the one that fills up.*

***It outcleans and . . . of course . . . outpulls because the traction bars are longer*** *— up to 256" more bar length per tractor. Here again, greater bar length means a bigger, firmer bite — and as a certain result, perfect cleaning because there is no spinning.*

*Listen to the Voice of Firestone every Monday evening over NBC*



## . . . And because it OUTCLEANS and takes a CENTER BITE the FIRESTONE CHAMPION OUTPULLS every other tractor tire